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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,871	06/27/2003	Lawrence W. McVoy	BIT 63186	7091
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Benjamin T. Queen, II Pietragallo, Bosick & Gordon One Oxford Centre 301 Grant Street, 38th Floor Pittsburgh, PA 15219				
		EXAMINER		
		HWANG, JOON H		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,871	<b>Applicant(s)</b> MCVOY ET AL.	
	<b>Examiner</b> Joon H. Hwang	<b>Art Unit</b> 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 48-84 is/are pending in the application.
- 4a) Of the above claim(s) 1-47 is/are ~~withdrawn from consideration~~ canceled.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-84 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/11/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The applicants canceled claims 1-47 and added new claims 48-84 in the amendment received on 4/12/07.

The pending claims are 48-84.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 48, 55, 65, and 74 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 48-61, 63-71, 73-80, and 82-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arun et al. (U.S. Patent No. 6,631,386) in view of Bergstraesser et al. (U.S. Publication No. 2005/0144198).

With respect to claim 48, Arun teaches a first computer including a first version of the associative array, wherein the first version of the associative array comprises a first key/value pair (i.e., a first user computer storing a record having a plurality of field/value pairs, such as row 20(1) in fig. 2 as a working copy, fig. 4, lines 20-54 in col. 2, and lines 52-67 in col. 26). Arun teaches a second computer including a second version of the associative array, wherein the second version of the associative array comprises a second key/value pair (i.e., a second user computer storing a record

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having a plurality of field/value pairs, such as row 20(1) in fig. 2 as a working copy, fig. 4, lines 20-54 in col. 2, and lines 52-67 in col. 26). Arun teaches a version controller, adapted to communicate with the first computer and the second computer (i.e., version control subsystem 11 in fig. 1 communicating with users), the version controller for merging modifications from the first version of the associative array and the second version of the associative array (i.e., items 154, 156, and 157 in figs. 6A and 6B) and resolving conflicts between the first version of the associative array and the second version of the associative array (i.e., item 153 in fig. 6). Arun does not explicitly disclose generating a third version of the associative array by such merging and resolving conflicts. However, Bergstraesser teaches generating a third version of the associative array by merging modifications from the first version of an object and the second version of the object and resolving conflicts between the first version of the object and the second version of the object (i.e., merging changes in the multiple versions into a single version of the object, section 63 and fig. 4) in order to provide efficient versioning for objects in a repository (section 13). Therefore, based on Arun in view of Bergstraesser, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Bergstraesser to the system of Arun in order to provide efficient versioning for objects in a repository.

With respect to claim 49, Arun teaches the version controller further generates a directed acyclic graph, wherein the directed acyclic graph identifies a modification to the associative array by the first version of the associative array and a modification to the associative array by the second version of the associative array (fig. 3 and fig. 5).

The limitations of claim 50 are rejected in the analysis of claims 48-49 above, and the claim is rejected on that basis.

With respect to claim 51, Arun teaches the version controller further generates a changeset including modifications to the associative array by the first version of the associative array and the second version of the associative array (i.e., item 151 in fig. 6).

With respect to claim 52, Arun teaches the version controller further executes at least one version control operation from a group of: creating the associative array, checking out the associative array, checking in the associative array, generating a report, cloning the associative array to generate a cloned associative array and displaying differences between the first version of the associative array and the second associative array (i.e., checking out the associative array, fig. 4, lines 13-31 in col. 26, and lines 20-54 in col. 2).

With respect to claim 53, Arun teaches the associative array comprises a file including: a key; and a value associated with the key (i.e., records in the form of files, lines 27-33 in col. 3 and lines 23-28 in col. 26).

With respect to claim 54, Arun teaches the version controller further organizes a plurality of associative arrays as a database table (fig. 2 and lines 49-67 in col. 4).

With respect to claim 55, Arun teaches generating a first version of the associative array by modifying a first key/value pair, wherein the first version of the associative array is a derivative of the associative array (i.e., a first user having a record including a plurality of field/value pairs, such as row 20(1) in fig. 2 as a working copy and modifying the record, fig. 3, fig. 4, fig. 5, lines 20-54 in col. 2, and lines 52-67

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in col. 26). Arun teaches generating a second version of the associative array by modifying a second key/value pair, wherein the second version of the associative array is a derivative of the associative array (i.e., a second user having the record including a plurality of field/value pairs, such as row 20(1) in fig. 2 as a working copy and modifying the record, fig. 3, fig. 4, fig. 5, lines 20-54 in col. 2, and lines 52-67 in col. 26). Arun teaches merging modifications from the first version of the associative array and the second version of the associative array (i.e., items 154, 156, and 157 in figs. 6A and 6B) and resolving conflict between the first version of the associative array and the second version of the associative array (i.e., item 153 in fig. 6). Arun does not explicitly disclose generating a third version of the associative array by such merging and resolving conflicts. However, Bergstraesser teaches generating a third version of the associative array by merging modifications from the first version of an object and the second version of the object and resolving conflicts between the first version of the object and the second version of the object (i.e., merging changes in the multiple versions into a single version of the object, section 63 and fig. 4) in order to provide efficient versioning for objects in a repository (section 13). Therefore, based on Arun in view of Bergstraesser, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Bergstraesser to the system of Arun in order to provide efficient versioning for objects in a repository.

With respect to claim 56, Arun teaches generating a first changeset identifying the modifications to the associative array in the first version of the associative array and generating a second changeset identifying the modifications to the associative

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array in the second version of the associative array (i.e., item 151 in fig. 6). Arun teaches applying the modifications identified by the first changeset and the second changeset to the associative array (i.e., items 154, 156, and 157 in figs. 6A and 6B). Therefore, the limitations of claim 56 are rejected in the analysis of claim 55 above, and the claim is rejected on that basis.

With respect to claim 57, Arun teaches generating a directed acyclic graph, the directed acyclic graph identifying a difference between a version of the associative array and the associative array (fig. 3 and fig. 5). Therefore, the limitations of claim 57 are rejected in the analysis of claims 55-56 above, and the claim is rejected on that basis.

With respect to claim 58, Arun teaches the directed acyclic graph identifies the modification to the associative array by the first version of the associative array and the modification to the associative array by the second version of the associative array (fig. 3 and fig. 5). Therefore, the limitations of claim 58 are rejected in the analysis of claim 57 above, and the claim is rejected on that basis.

With respect to claim 59, Arun teaches comparing key/value pairs in the first version of the associative array, the second version of the associative array and the associative array and responsive to conflicts in the comparison of key/value pairs, prompting a user to specify a value for a conflicting key/value pair (i.e., items 152-153 in fig. 6).

With respect to claim 60, Arun teaches displaying a version of the associative array as a database record (fig. 2 and lines 49-67 in col. 4). Therefore, the limitations

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of claim 60 are rejected in the analysis of claim 55 above, and the claim is rejected on that basis.

With respect to claim 61, Arun teaches displaying a plurality of modified associative arrays as a database table (fig. 2 and lines 49-67 in col. 4).

With respect to claim 63, Arun teaches selecting a conflict, applying an algorithm having knowledge of the data in the associative array, and modifying the version of the associative array responsive to a result of the applied algorithm (fig. 6). Therefore, the limitations of claim 63 are rejected in the analysis of claim 56 above, and the claim is rejected on that basis.

With respect to claim 64, Arun teaches selecting a key/value pair having conflicting values in the first version of the associative array and the second version of the associative array, evaluating historical values of the selected conflicting key/value pair, and modifying the selected key/value pair responsive to the evaluation (fig. 6).

With respect to claim 65, Arun teaches a data store (i.e., database in fig. 1) including the associative array, the associative array comprising a file including at least one key/value pair (i.e., records in the form of files, lines 27-33 in col. 3 and lines 23-28 in col. 26), a first version of the associative array having a first key/value pair and a second version of the associative array having a second key/value pair (i.e., each first and second user having a record including a plurality of field/value pairs, such as row 20(1) in fig. 2 as a working copy and modifying the record, fig. 3, fig. 4, fig. 5, lines 20-54 in col. 2, and lines 52-67 in col. 26). Arun teaches a version controller adapted to communicate with the data store (i.e., version control subsystem 11 in fig. 1



communicating with the database), the version controller for merging modifications from the first version of the associative array and the second version of the associative array (i.e., items 154, 156, and 157 in figs. 6A and 6B) and resolving conflicts between the first version of the associative array and the second version of the associative array (i.e., item 153 in fig. 6). Arun does not explicitly disclose generating a third version of the associative array by such merging and resolving conflicts. However, Bergstraesser teaches generating a third version of the associative array by merging modifications from the first version of an object and the second version of the object and resolving conflicts between the first version of the object and the second version of the object (i.e., merging changes in the multiple versions into a single version of the object, section 63 and fig. 4) in order to provide efficient versioning for objects in a repository (section 13). Therefore, based on Arun in view of Bergstraesser, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Bergstraesser to the system of Arun in order to provide efficient versioning for objects in a repository.

With respect to claim 66, Arun teaches the version controller further generates a directed acyclic graph, wherein the directed acyclic graph identifies a modification to the associative array by the first version of the associative array and a modification to the associative array by the second version of the associative array (fig. 3 and fig. 5).

With respect to claim 67, Arun teaches a communication module for connecting the version controller to a computer network and receiving a fourth version of the

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associative array including a modified key/value pair (i.e., version control subsystem 11 communicating a third user for a fourth version of the associative array in fig. 1).

With respect to claim 68, Arun teaches merging modification from the fourth version of the associative array with another version of the associative array (i.e., items 154, 156, and 157 in figs. 6A and 6B). Therefore, the limitations of claim 68 are rejected in the analysis of claims 65 and 67 above, and the claim is rejected on that basis.

With respect to claim 69, Arun teaches the version controller further resolves a conflict between the fourth version of the associative array and at least one from the group of the first version of the associative array, the second version of the associative array and the third version of the associative array (i.e., item 153 in fig. 6).

With respect to claim 70, Arun teaches the version controller further organizes a plurality of associative arrays as a database table (fig. 2 and lines 49-67 in col. 4).

With respect to claim 71, Arun teaches the associative array comprises a file including a key and a value (i.e., records in the form of files, lines 27-33 in col. 3 and lines 23-28 in col. 26).

With respect to claim 73, Arun teaches the data store further includes a specification file defining at least one of a default value associated with a key and a constraint on a value associated with a key (i.e., a default value in a field of a table, lines 16-27 in col. 6).

The limitations of claim 74 are rejected in the analysis of claim 55 above, and the claim is rejected on that basis.

The limitations of claim 75 are rejected in the analysis of claim 56 above, and the claim is rejected on that basis.

The limitations of claim 76 are rejected in the analysis of claim 57 above, and the claim is rejected on that basis.

The limitations of claim 77 are rejected in the analysis of claim 58 above, and the claim is rejected on that basis.

The limitations of claim 78 are rejected in the analysis of claim 59 above, and the claim is rejected on that basis.

The limitations of claim 79 are rejected in the analysis of claim 60 above, and the claim is rejected on that basis.

The limitations of claim 80 are rejected in the analysis of claim 61 above, and the claim is rejected on that basis.

With respect to claim 82, Arun teaches selecting a key/value pair having conflicts values in the first version of the associative array and the second version of the associative array (i.e., items 151-152 in fig. 6), prompting a user to input a value for the selected key/value pair (i.e., item 153 in fig. 6), and associating the user input value with the selected key/value pair (i.e., items 154, 156, and 157 in figs. 6A and 6B).

The limitations of claim 83 are rejected in the analysis of claim 64 above, and the claim is rejected on that basis.

The limitations of claim 84 are rejected in the analysis of claim 55 above, and the claim is rejected on that basis.

5. Claims 62 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arun et al. (U.S. Patent No. 6,631,386) in view of Bergstraesser et al. (U.S. Publication No. 2005/0144198), and further in view of Boothby (U.S. Patent No. 5,684,990).

With respect to claim 62, Arun and Bergstraesser disclose the claimed subject matter as discussed above except generating a report including the third version of the associative array and data or metadata describing at least one of the directed acyclic graph, the merged modification and the conflicts. However, Boothby teaches generating a report including the version of the associative array and data or metadata describing at least one of the directed acyclic graph, the merged modification and the conflicts (i.e., generating a status file for the merged modification and the conflicts, fig. 2 and lines 32-45 in col. 5) in order to synchronize data in two systems. Therefore, based on Arun in view of Bergstraesser, and further in view of Boothby, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Boothby to the system of Arun in order to synchronize data in two systems.

The limitations of claim 81 are rejected in the analysis of claim 62 above, and the claim is rejected on that basis.

6. Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arun et al. (U.S. Patent No. 6,631,386) in view of Bergstraesser et al. (U.S. Publication No. 2005/0144198), and further in view of Rys et al. (U.S. Publication No. 2004/0230569).

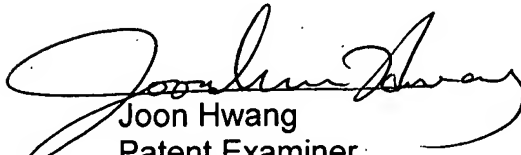
With respect to claim 72, Arun and Bergstraesser disclose the claimed subject matter as discussed above except an XML file. However, Rys teaches the associative array comprises an XML file including a key and a value associated with the key (fig. 2 and fig. 4) in order to exchange data across a multitude of computer systems (section 5). Therefore, based on Arun in view of Bergstraesser, and further in view of Rys, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Rys to the system of Arun in order to exchange data across a multitude of computer systems.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 571-272-4036. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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6/22/07